REMARKS:

Status Of Claims

Claims 1-13 were previously pending in the application. Claims 14-17 have been added. Thus, claims 1-17 are currently pending in the application with claims 1, 9, and 11 being independent.

Office Action

In the office action, the Examiner rejected claims 1-4, 6, 9, and 11 under 35 U.S.C. 102(b) as being anticipated by Lu, U.S. Patent No. 5,896,422. The Examiner also rejected claims 5, 10, and 13 under 35 U.S.C. 103(a) as being unpatentable over Lu in view of Holloway, U.S. Patent No. 6,747,996. The Examiner also rejected claims 7 and 8 under 35 U.S.C. 103(a) as being unpatentable over Lu in view of Ueunten, U.S. Patent No. 5,412,309. The Examiner also rejected claim 12 under 35 U.S.C. 103(a) as being unpatentable over Lu in view of McGibney, U.S. Patent No. 6,594,273. Applicant respectfully submits that the currently pending claims distinguish the present invention from Lu, Holloway, Ueunten, McGibney, and the other prior art references of record, taken alone or in combination with each other.

Specifically, claim 1 recites "determining a median value of the self-generated broadcast signal". For example, as stated in paragraphs 32 and 33 of the present specification:

A positive peak detector circuit 320 and negative peak detector circuits 330 are provided the digitized signal from the A/D converter 310. The peak detector circuits 320, 330 are armed once the transmitter has been activated, so that the detectors do not saturate on the high noise level present prior to the FM quieting effect taking place. When the detector circuits 320, 330 are armed, they clear the old value being held and begin to track the respective high and low peak input values.

Once the transmission has completed, the positive and negative peak detectors 320, 330 are dis-armed, and the values they have measured are read by the calculation task unit 340. The calculation task unit 340 finds the mean value between the positive and negative peak values (such as by averaging), and then the filter 350 applies a filter process to reduce short-term jitter in the measurement. The output of the filter 350 is the value of the signal that represents the midpoint between the logical 1 and 0 states, which is the bit detection threshold. The resulting bit detection threshold is communicated to the bit detector 360.

Thus, the present invention captures positive and negative peaks, determines "a median value", and then uses that median value as a new bit detection threshold. It is important to note that the present invention uses a true median value, rather than an average of various samples which may be susceptible to weighting. For example, while averaging may be used in the example described above, the end result is still a true median value as the limitations of averaging have been factored out.

In contrast, Lu's threshold is calculated as an average of averages of averages of samples that fit a certain criteria. For example, the signal is sampled and only those samples which represent a "flat top" bit are used. Then, those samples are averaged across each bit to determine an average bit amplitude. Then, the average bit amplitudes are averaged to determine a +1 average amplitude and a –1 average amplitude. Then, and only then, is the threshold calculated as an average of the +1 average amplitude and

a –1 average amplitude.

Of course, Lu describes these calculations as typical averaging, which is a weighted calculation. For example, in column 9, Lu calculates two different thresholds. First, in lines 12-29, Lu calculates a threshold of +0.0375 volts. Then, in lines 30-50, Lu calculates a new threshold of –0.0125 volts, just by including an additional –1 average amplitude and thereby more negatively weighting the threshold producing average. In fact, Lu never actually determines a true "median value", as claimed in claim 1.

Furthermore, Lu's weighted averages simply cannot be equivalent to, nor suggestive of, the true median value of the present invention. In fact, any argument to that effect would negate Lu's entire invention. For example, the very peaks Lu uses are always +1 and –1 and a true median of these peaks would always be zero. Therefore, Lu's threshold would never change and there would be no need for the complex averaging Lu discloses. Thus, Lu's weighted averages are simply not equivalent to the peak to peak median of the present invention, and therefore Lu fails to disclose, suggest, or make obvious "determining a median value", as claimed in claim 1.

Finally, Lu simply does not perform any of the above calculations on a "self generated broadcast signal", as claimed in claim 1. Rather, as disclosed in the description of Figure 1 and in column 4, lines 36-37, Lu works exclusively with "a GMSK received signal". Thus, Lu fails to disclose, suggest, or make obvious "determining a median value of the self-generated broadcast signal", as claimed in claim 1. In fact, Lu actually teaches away from the currently pending claims.

Claim 4 recites "wherein determining a median value of the self-generated broadcast signal further comprises: detecting a positive peak frequency value and a negative frequency peak value for the self-generated broadcast signal; and determining a peak-to-peak deviation of the self-generated broadcast signal". As stated on paragraph 22 of the present specification, "the transmission signal in an ADS-B service is typically a very clean signal with distinct positive and negative frequency peaks defined by the frequency excursions. The bit detection threshold adjustment process will detect these frequency peaks in the transmission signal and then calculate a peak-to-peak deviation, i.e., a median value". Thus, the present invention as claimed in claim 4, calculates a peak-to-peak deviation between positive and negative frequency peaks.

In contrast, as stated above, Lu calculates an average of averages of averages of amplitude samples. Therefore, Lu simply does not teach detecting frequency peaks, much less determining a peak-to-peak deviation. Futhermore, as discussed above, Lu works exclusively with a received signal, rather than the self-generated broadcast signal of the present invention. As a result, Lu fails to disclose, suggest, or make obvious "detecting a positive peak frequency value and a negative frequency peak value for the self-generated broadcast signal; and determining a peak-to-peak deviation of the self-generated broadcast signal", as claimed in claim 4.

Similarly, claim 9 recites "detecting a positive peak value and a negative frequency peak value from the digitized ownship signal" and "calculating a peak-to-peak deviation for the digitized ownship signal based on the positive and negative frequency peak values".

Claim 11 recites "a positive peak detector [that] determines a positive peak value", "a negative frequency peak detector [that] determines a negative frequency peak value", and "a calculation task unit ... that calculates a peak-to-peak deviation to formulate a bit detection threshold value".

In contrast, as discussed above, Lu does not teach detecting frequency peaks or determining a peak-to-peak deviation. Furthermore, Lu does not teach performing any analysis on a self-generated or "ownship" signal. As a result, Lu fails to disclose, suggest, or make obvious "detecting a positive peak value and a negative frequency peak value from the digitized ownship signal" or "calculating a peak-to-peak deviation for the digitized ownship signal based on the positive and negative frequency peak values", as claimed in claim 9, or the limitations of claim 11.

Claims 14-17 have been added to further distinguish the present invention over the prior art. The remaining claims all depend directly or indirectly from independent claims 1, 9, or 11, and are therefore also allowable.

Any additional fee which is due in connection with this amendment should be applied against our Deposit Account No. 501-791. In view of the foregoing, a Notice of Allowance appears to be in order and such is courteously solicited.

Respectfully submitted,

By: _____

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